

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: JANNES, GEERT
ROSSAU, RUDI
VAN HEUVERSWEYN, HUGO
- (ii) TITLE OF INVENTION: SIMULTANEOUS DETECTION, IDENTIFICATION
AND DIFFERENTIATION OF EUBACTERIAL TAXA USING A
HYBRIDIZATION ASSAY
- (iii) NUMBER OF SEQUENCES: 216
- (iv) CORRESPONDENCE ADDRESS:
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 - (C) CITY: WASHINGTON
 - (D) STATE: D.C.
 - (E) COUNTRY: USA
 - (F) ZIP: 22201
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: US 08/765,332
 - (B) FILING DATE: 23-DEC-1996
 - (C) CLASSIFICATION:
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 - (A) APPLICATION NUMBER: WO PCT/EP95/02452
 - (B) FILING DATE: 23-JUN-1995
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 - (A) APPLICATION NUMBER: EP 94870106.5
 - (B) FILING DATE: 24-JUN-1994
- (x) ATTORNEY/AGENT INFORMATION:
 - (A) NAME: SADOFF, B.J.
 - (B) REGISTRATION NUMBER: 36,663
 - (C) REFERENCE/DOCKET NUMBER: 1487-14
- (xi) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: 703-816-4091
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(2) INFORMATION FOR SEQ ID NO: 1:

- (1) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 25 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ACTGGATAGT GGTGCGAGC ATCTA

25

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

CTTCTGAATA GTGGTTGCGA GCATCT

26

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

GGGTGCATGA CAACAAAGTT GGCCA

25

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 24 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

GACTTGTTCC AGGTGTTGTC CCAC

24

(2) INFORMATION FOR SEQ ID NO: 5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

CGGCTAGCGG TGGCGTGTC T

21

(2) INFORMATION FOR SEQ ID NO: 6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

CAACAGCAAA TGATTGCCAG ACACAC

26

(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

GAGGGGTTCC CGTCTGTAGT G

21

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

TGAGGGGTTC TCGTCTGTAG TG

22

(2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

CACTCGGTTCG ATCCGTGTGG A

21

(2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

TCGGTCCGTC CGTGTGGAGT C

21

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

GTGGCCGGCG TTCATCGAAA

20

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

GCATAGTCCT TAGGGCTGAT GCGTT

25

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

GCTGATGCGT TCGTCGAAAT GTGTA

25

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

CTGATGCGTT CGTCGAAATG TGT

23

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

TGATGCGTTC GTCGAAATGT GT

22

(2) INFORMATION FOR SEQ ID NO: 16:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GGCTGATGCG TTCGTCGAAA TGTGTAA

27

(2) INFORMATION FOR SEQ ID NO: 17:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

ACTAGATGAA CGCGTAGTCC TTGT

24

(2) INFORMATION FOR SEQ ID NO: 18:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

TGGACGAAAA CCGGGTGCAC AA

22

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 38 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

GTGTAATTTC TTTTAACT CTTGTGTGTA AGTAAGTG

38

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

TGGCCGGCGT GTTCATCGAA A

21

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 26 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

GCACTTCAAT TGGTGAAGTG CGAGCC

26

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

GCGTGGTCTT CATGGCCGG

19

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

ACGCGTGGTC CTTCGTGG

18

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

TCGGCTCGTT CTGAGTGGTG TC

22

(2) INFORMATION FOR SEQ ID NO: 25:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

GATGCGTTTG CTACGGGTAG CGT

23

(2) INFORMATION FOR SEQ ID NO: 26:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GATGCGTTGC CTACGGGTAG CGT

23

(2) INFORMATION FOR SEQ ID NO: 27:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

ATGCGTTGCC CTACGGGTAG CGT

23

(2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CGGGCTCTGT TCGAGAGTTG TC

22

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

GGTGTGGACT TTGACTTCTG AATAG

25

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

CGGC AAAACG TCGGACTGTC A

21

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

AACACCCTCG GGTGCTGTCC

20

(2) INFORMATION FOR SEQ ID NO: 32:

(1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

GTATGCGTTG TCGTCGCGG C

21

(2) INFORMATION FOR SEQ ID NO: 33:

(1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

CGTGAGGGGT CATCGTCTGT AG

22

(2) INFORMATION FOR SEQ ID NO: 34:

(1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

TGGTGTGCTG CGTGATCCGA T

21

(2) INFORMATION FOR SEQ ID NO: 35:

- (1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 26 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

TGAATGTTTCG TGGATGAACA TTGATT

26

(2) INFORMATION FOR SEQ ID NO: 36:

- (1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

CACTGGTGAT CATTCAAGTC AAG

23

(2) INFORMATION FOR SEQ ID NO: 37:

- (1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 33 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

TGAATGTTTCG TVVATGAACA TTGATTCTG GTC

33

(2) INFORMATION FOR SEQ ID NO: 38:

- (1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 29 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

CTCTTTTCACT GGTGATCATT CAAGTCAAG

29

(2) INFORMATION FOR SEQ ID NO: 39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 31 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

CAAGTAACCG AGAATCATCT GAAAGTGAAT C

31

(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 36 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

AAACAACCTT TACTTCGTAG AAGTAAATTG GTTAAG

36

(2) INFORMATION FOR SEQ ID NO: 41:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 32 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

TGAGAGGTTA GTACTTCTCA GTATGTTTGT TC

32

(2) INFORMATION FOR SEQ ID NO: 42:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

AGGCACTATG CTTGAAGCAT CGC

23

(2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 38 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

GTTAGCATAA ATAGGTAAC TTTATGACA CAAGTAAC

38

(2) INFORMATION FOR SEQ ID NO: 44:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 36 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

AGTTAGCATA AGTAGTGTA CTATTTATGA CACAAG

36

(2) INFORMATION FOR SEQ ID NO: 45:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

GGAAGAAGCC TGAGAAGGTT TCTGAC

26

(2) INFORMATION FOR SEQ ID NO: 46:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

GCATTTATAT GTAAGAGCAA GCATTCTATT TCA

33

(2) INFORMATION FOR SEQ ID NO: 47:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

GAGTAGCGTG GTGAGGACGA GA

22

(2) INFORMATION FOR SEQ ID NO: 48:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

GGATAACTGT CTTAGGACGG TTTGAC

26

(2) INFORMATION FOR SEQ ID NO: 49:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 30 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

ATCGGTGGTA AATTAAACCC AAATCCCTGT

30

(2) INFORMATION FOR SEQ ID NO: 50:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 30 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

CAGTTCTGAA AGAACATTTC CGCTTCTTTC

30

(2) INFORMATION FOR SEQ ID NO: 51:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 30 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

CACCCATTAA TTTTTCGGT GTTAAAACCC

30

(2) INFORMATION FOR SEQ ID NO: 52:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

CAAAACTGAA AACGACAATC TTTCTAGTTC C

31

(2) INFORMATION FOR SEQ ID NO: 53:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 30 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

TACCAAGCAA AACCGAGTGA ATAAAGAGTT

30

(2) INFORMATION FOR SEQ ID NO: 54:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

CAGAAGATGC GGAATAACGT GAC

23

(2) INFORMATION FOR SEQ ID NO: 55:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 26 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

AACGAAGCCG TATGTGAGCA TTTGAC

26

(2) INFORMATION FOR SEQ ID NO: 56:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

GAACGTAAC TCACTGTAAC GTTGGACTTA T

31

(2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

GCTTAAGTGC ACAGTGCTCT AACTGA

27

(2) INFORMATION FOR SEQ ID NO: 58:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

CACGGTAATT AGTGTGATCT GACGAAG

27

(2) INFORMATION FOR SEQ ID NO: 59:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

CGTGCCGCCT TCGTTTCTCT TT

22

(2) INFORMATION FOR SEQ ID NO: 60:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

TTCGCTTCGG GGTGGATCTG TG

22

(2) INFORMATION FOR SEQ ID NO: 61:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 28 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

CAAAACTGAC TTACGAGTCA CGTTTGAG

28

(2) INFORMATION FOR SEQ ID NO: 62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

GATGTATGCT TCGTTATTCC ACGCC

25

(2) INFORMATION FOR SEQ ID NO: 63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

GGTCAAACCT CCAGGGACGC C

21

(2) INFORMATION FOR SEQ ID NO: 64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

GCGGTAATGT GTGAAAGCGT TGCC

24

(2) INFORMATION FOR SEQ ID NO: 65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

TCCCTTGTGG CCTGTGTG

18

(2) INFORMATION FOR SEQ ID NO: 66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

TCCTTCATCG GCTCTTCGA

19

(2) INFORMATION FOR SEQ ID NO: 67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

GATGCCAAGG CATCCACC

18

(2) INFORMATION FOR SEQ ID NO: 68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

CCTCCCACGT CCTTCATCG

19

(2) INFORMATION FOR SEQ ID NO: 69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

AAGGTTTCTG ACTAGGTTGG GC

22

(2) INFORMATION FOR SEQ ID NO: 70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

GGTGAAGTGC TTGCATGGAT CT

22

(2) INFORMATION FOR SEQ ID NO: 71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

ACCTGTGAGT TTTCGTTCTT CTC

23

(2) INFORMATION FOR SEQ ID NO: 72:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

CTATTTGTTT AGTTTGGAGA GGTT

24

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

ATTTTCCGTA TCAGCGATGA TAC

23

(2) INFORMATION FOR SEQ ID NO: 74:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

ACGAAGTAAA GGTGTTTTT CT

22

(2) INFORMATION FOR SEQ ID NO: 75:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 25 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

GAGAGGTTAC TCTCTTTTAT GTCAG

25

(2) INFORMATION FOR SEQ ID NO: 76:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 275 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 76:

AAGGAGCACC ACGAAAACGC CCCAACTGGT GGGGCGTAGG CCGTGAGGGG TTCTTGTCTG 60

TAGTGGGCGA GAGCCGGGTG CATGACAACA AAGTTGGCCA CCAACACACT GTTGGGTCCT 120

GAGGCAACAC TCGGACTTGT TCCAGGTGTT GTCCCACCGC CTTGGTGGTG GGGTGTGGTG 180

TTTGAGAACT GGATAGTGGT TGCAGCATC AATGGATACG CTGCCGGCTA GCGGTGGCGT 240

GTTCTTTGTG CAATATTCTT TGGTTTTTGT TGTTG 275

(2) INFORMATION FOR SEQ ID NO: 77:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 278 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

AAGGAGCACC ACGAAAAGCA CCCCAACTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT 60

GTAAGTGGACG GGGGCCGGNT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120

GAGACAACAC TCGGTCCGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180

TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TGGTCTTCGT GGCCGGCGTT 240
 CATCGAAATG TGTAAATTCT TCCTTAATC TTGTGTGT 278

(2) INFORMATION FOR SEQ ID NO: 78:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 278 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

AAGGAGCACC ACGAAAAGCA CCCCAACTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT 60
 GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120
 GAGACAACAC TCGGTCCGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TGGTCTTCGT GGCCGGCGTT 240
 CATCGAAATG TGTAAATTCT TTTTAACTC TTGTGTGT 278

(2) INFORMATION FOR SEQ ID NO: 79:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 280 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT 60
 GTAGTGGACG GGGGCCGGNT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT 120
 GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT 180
 TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTGT GGCTGATGCG 240
 CTCGTCGAAA TGTGTAATTT CTTCTTTGGT GTNTGTGTGT 280

(2) INFORMATION FOR SEQ ID NO: 80:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 281 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

```
AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT    60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT    120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT    180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTTG TGGCTGATGC    240
GTTTCATCAA ATGTGTAATT TCTTTTTTGG TTTNTGTGTG T                281
```

(2) INFORMATION FOR SEQ ID NO: 81:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 280 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

```
AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT    60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT    120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT    180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGCCCTTGC GGCTGATGCG    240
TTCGNCGAAA TGTGTAATTT CTTCTCTGGT TTCTGTGTGT                280
```

(2) INFORMATION FOR SEQ ID NO: 82:

(1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 282 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GNAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTCG TGGCTGATGC	240
GTTTCATCGAA ATGTGTAATT TCTTCTTTGG TTTTGGGTGT GT	282

(2) INFORMATION FOR SEQ ID NO: 83:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 282 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCCTCT	60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATCGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTTG GGGCTGATGT	240
GTTTCATCAA AATGTGTAAT TTCTTTTNG GTTTNGTGT GT	282

(2) INFORMATION FOR SEQ ID NO: 84:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 281 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GGAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCG TAGTCCTTCG TGGCTGATGC	240
GTTTCATTGAA ATGTGTAATT TCTTCTCTGG TTTTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 85:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 280 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTGT GGCTGATGCG	240
CTCGTCGAAA TGTGTAATTT CTCTTTTGGT TTTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 86:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 292 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTTGGTGT	180
TTGAGTATTG GATAGTGGTT GCGAGCATCT AGATGAGCGC GTAGTCCTTG TGGCTGATGC	240
GTTCGTCGAA ATGTGTAATT TCTTCTTTGG GTTTTTGTGT GT	282

(2) INFORMATION FOR SEQ ID NO: 87:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 281 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

AAGGAGCACC ACGAAAAGCA CCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GNAGCCGGNT GCGCAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGNCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTNGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGGGCGCG TAGTCCTTTG TGA CTGATGC	240
GTTCATCAAA ATGTGTAATT TCTTTTTTGN NTTTNGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 88:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 281 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GGAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTTG TGGCTGACGC	240
GTTCATCGAA ATGTGTAATT TCTTCTTTGG TTTTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 89:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 280 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGANGG GTTCCCCTCT	60
GTAGTGGACG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120

GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAGCGCA TAGTCCTTAG GGCTGATGCG	240
TTCGTCGNAA TGTGTAATTT CTTCTTTGGT TTTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 90:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 282 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATAATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG TGGCTGACGT	240
GTTTCATCGAA ATGTGTAATT TCTTNTNTTA ACTCTTGTGT GT	292

(2) INFORMATION FOR SEQ ID NO: 91:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 280 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

AAGGAGCACC ACGAAAAGCA CCCCATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GGAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCAGTC CGTGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTGT GACTGACGTG	240
TTCATCGAAA TGTGTAATTT CTTTCTAAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 92:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 281 base pairs
 - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATAT CTTCTCTGGT TTTCGGTGIG T	281

(2) INFORMATION FOR SEQ ID NO: 93:

(1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 280 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGNT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTTTTNNAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 94:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 280 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTTCTTTGGT TTTNGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 95:

- (1) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 281 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 95:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG NGGNCNGCGT	240
GTTTCATCGAA ATGTGTAATT TCTNTNTAA CTCTNGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 96:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 281 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(x1) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

AAGGAGCACC ACGAAAAGCA TCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TAGTCCTTCG GGGCCGGCGT	240
GTTTCATCGAA ATGTGTAATT TCTTTTTTAA CTCTTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 97:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 280 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGAAC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTTCTTTAAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 98:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 280 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGN AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCNGCGTG	240
TTCATCGAAA TGTGTAATTT CTTTTTTAAC TCTTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 99:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 280 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

AAGGAGCACC ACGAAAAGCA CTTCAATTGG TGAAGTGCGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AAAACCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCGATC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGTGTT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA GATGAACGCG TGGTCTTCAT GGCCGGCGTG	240
TTCATCGAAA TGTGTAATTT CTTTTTTAAC TCTTGTTGT	280

(2) INFORMATION FOR SEQ ID NO: 100:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 281 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

AAGGAGCACC ACGAAAAGCA CCCCAACTGG TGGGGTGCGA GCCGTGAGGG GTCCTCGCCT	60
GTAGTGGGCG GGGGCCGGGT GCACAACAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGGCAACAC TCGGTCGTT CTGAGTGGTG TCCCTCCATC TTGGTGGTGG GGTGTGGTGT	180
TTGAGTATTG GATAGTGGTT GCGAGCATCT AAACGGATGC GTGGCCGGCA ACGGTGGCGT	240
GTTCGTTGAA ATGTGTAATT TCTTTTTTGG TTTTGTGTG T	281

(2) INFORMATION FOR SEQ ID NO: 101:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 274 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

AAGGAGCACC ACGAAAAGCA TCCCAACAAG TGGGGTGCAA NCCGTGAGGG GTTCTCGTCT	60
---	----

GTAGTGGACG AAAGCCGGGT GCACGACAAC AAGCAAAGCC AGACACACTA TTGGGTCCTG	120
AGGCAACACT CGGGCTCTGT TCGAGAGTTG TCCCACCATC TTGGTGGTGG GGTGTGGTGT	180
TTGAGAATTG GATAGTGGTT GCGAGCATCA AATGGATGCG TTGCCCTACG GGTAGCGTGT	240
TCTTTTGTGC AATTTTATTC TTTGGTTTTT GTGT	274

(2) INFORMATION FOR SEQ ID NO: 102:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 293 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 102:

AAGGAGCACC ATTTCCCACT CGATGAACATA GGAACATAA AGTAGGCATC TGTAGTGGAT	60
ATCTACTTGG TGAATATGTT TTGTAAATCC TGTCACCCC GTGGATGGGT AGTCGGCAAA	120
ACGTCGGACT GTCATAAGAA TTGAAACGCT GGCACACTGT TGGGTCCTGA GGCAACACGT	180
TGTGTGTGCA CCCTGCTTGG TGGTGGGGTG TGGACTTTGA CTTCTGAATA GTGGTTGCCA	240
GCATCTAAAC ATAGCCTCGC TCGTTTTTGA GTGGGGCTGG TTTTGCAATT TTA	293

(2) INFORMATION FOR SEQ ID NO: 103:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 296 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 103:

AAGGAGCACC ATTTCCCACT CGGATGAAC AGGGAACATA AAGTAGGCAT CTGTAGTGGG	60
TATCTACTTG GTGAATATGT TTTGTAAATC CTGTCCACCC CCGTGGATGG GTAGTCGGCA	120
AAACGTCGGA CTGTCATAAG AATTGAAACG CTGGCACACT GTTGGGTCCT GAGGCAACAC	180
GTTGTGTGTG CACCCTGCTT GGTGGTGGGG TGTGGACTTT GACTTCTGAA TAGTGGTTGC	240
GAGCATCTAA ACATAGCCTC GCTCGTTTTT GAGTGAGGCT GGTTTTTGCA ATTTTA	296

(2) INFORMATION FOR SEQ ID NO: 104:

- (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 274 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 104:

AAGGAGCACC	ACGAAGAGCA	CTCCAATTGG	TGGGGTGCGA	GCCGTGAGGG	GTCATCGTCT	60
GTAGTGGACG	AAGACCGGGT	GCACGACAAC	AAGCTAAGCC	AGACACACTA	TTGGGTCCTG	120
AGGCAACACC	CTCGGGTGCT	GTCCCCCAT	CTTGGTGGTG	GGGTGTGGTG	TTTGAGAATT	180
GGATAGTGGT	TGCGAGCATC	AAAATGTATG	CGTTGTCGTT	CTCGGCAACG	TGTTCTTTT	240
GTGCAATTTA	TTCTTTGGTT	TTGTAGTGT	TTGT			274

(2) INFORMATION FOR SEQ ID NO: 105:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 278 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 105:

AAGGAGCACC	ACGAAGAGCA	CTCCAATTGG	TGGGGTGCGA	GCCGNGAGGG	GTCATCGTCT	60
GTAGTGGACG	AAGACTGGGT	GCACGACAAC	AAAGCAAGCC	AGACACACTA	TTGGGTCCTG	120
AGGCAACACC	CTCGGGTGCT	GCCCCCTCCAT	CTTGGTGGTG	GGGTGTGGTG	TTTGAGAACT	180
GGATAGTGGT	TGCGAGCATC	AAAAATGTAT	GCGTTGTCGT	TCGCGACAAC	GTGTTCTTTT	240
TGTGCAATTT	TAATTCTTTT	GGTTTTGGTA	GTGTTTGT			278

(2) INFORMATION FOR SEQ ID NO: 106:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 276 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 106:

AAGGAGCACC ACGAGAAGCA CTCCAATTGG TGGGGTGCAA GCCGTGAGGG GTCATCGTCT	60
GTAGTGGACG AAGACCGGGT GCACGACAAC AAGCAAAGCC AGACACACTA TTGGGTCCTG	120
AGGCAACACC CTCGGGTGCT GTCCCCCAT CTTGGTGGTG GGGTGTGGTG TTTGAGAACT	180
GGATAGTGGT TCGGAGCATC AAAATGTATG CGTTGTCGTT CGCGGCAACG TGTTCCTTTT	240
GTGCAATTTT TATTCCTTGG TTTTGTAGT GTTTGT	276

(2) INFORMATION FOR SEQ ID NO: 107:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 277 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 107:

AAGGAGCACC ACGAAAAGCA CCCCATTGG TGGGGTGCAA GCCGTGAGGG GTTCCCCCCT	60
GTAGTGGGCG GGGCCGGGTG CGCAACAGCA AATGATTGCC AGACACACTA TTGGGCCCTG	120
AGGCAACACT CGGATCGATT GAGTGCTTGT CCCCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGAACTGG ATAGTGGTTG CGAGCATCTA AATGAACGCA CTGCCGATGG TGGTGTGTTC	240
GTTTGTGTGA ATTTTATTCT TTGGTTTTTG TGTTGT	277

(2) INFORMATION FOR SEQ ID NO: 108:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 282 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTNAGGG GTTCTCGTCT	60
GTAGTGGATG GCAGCCGGGT GCACANCAGC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGTCAGTC CGTGTGGAGT CCCTCCATCT TGGTGGTGGG GTGTGGNGTT	180
TGAGTATTGG ATAGTGGTTG CGANCATCTA GATGAACGCG TAGTCCTCNG TGGCTGACGT	240

GTTCATCAAA ATGTGTAATT TCTTTTANGG GTTNGGTGT CT

282

(2) INFORMATION FOR SEQ ID NO: 109:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 280 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGNGAGGG GTTCTCGCCT	60
GTAGTGGNCG AGGGCCGGAT GCACAACAAC ACATGATTGC CAGACACACT ATTGGGCCCT	120
GANACAACAC TCGGCCAGTC CGTGTGGTGT CCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATNGG ATAGTNGTTG NGANCATCTA AACGGCTGCG TNGNCNNGAA CGGTGGCGTG	240
TTCGNTAAAA TGTGTAATTT CTTTNGGT TTGGGTGTNT	280

(2) INFORMATION FOR SEQ ID NO: 110:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 280 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

AAGGAGCACC ACGAAAAGCA CTCCAATTGG TGGGGTGCGA GCCGTGAGGG GTTCTCGCCT	60
GTAGTGGGCG ANGGCCGGGT GCACAACAAC AAATGATTGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCAGTC CGTGTGGTGT CCCNCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGTATTGG ATAGTGGTTG CGAGCATCTA AANGGNTGCG TTGCCGNNAN CNGTGGCGTN	240
TTCGNTAAAA TGTGTAANTT CTTTTNGGT TTGTGTGTGT	280

(2) INFORMATION FOR SEQ ID NO: 111:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 471 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

```
ATCGAAGATC CCGGCTTCTT CATAAGCTCC CACACGAATT GCTTGATTCA CTGGTTAGAC    60
GATTGGGTCT GTAGCTCAGT TGGTTAGAGC GCACCCCTGA TAAGGGTGAG GTCGGCAGTT    120
CGAATCTGCC CAGACCCACC AATTGTTGGT GTGCTGCGTG ATCCGATACG GGGCCATAGC    180
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGG AGTTCGATCC TCCTTGGCTC    240
CACCATCTAA AACAACTGTC GAAAGCTCAG AAATGAATGT TCGTGGATGA ACATTGATTT    300
CTGGTCTTTG CACCAGAACT GTTCTTTAAA AATTCGGGTA TGTGATAGAA GTAAGACTGA    360
ATGATCTCTT TCACTGGTGA TCATTCAAGT CAAGGTAAAA TTTGCGAGTT CAAGCGCGAA    420
TTTTCGGCGA ATGTCGTCTT CACAGTATAA CCAGATTGCT TGGGGTTATA T            471
```

(2) INFORMATION FOR SEQ ID NO: 112:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 520 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

```
ATCGAAGACA TCAGCTTCTT CATAAGTATC CACACGAATT GCTTGATTCA TAGTCGAACG    60
AATGCTGTAA CGCGACCCGT GTTATAGGTC TGTAGCTCAG TTGGTTAGAG CGCACCCCTG    120
ATAAGGGTGA GGTGGGCACT TCAAATCTGC CCAGACCTAC CAATTGCTTG GTCGAGAAGA    180
ATACGGGGCC ATAGCTCAGC TGGGAGAGCG CCTGCCTTGC ACGCAGGAGG TCAGCGGTTC    240
GATCCCCTTT GGCTCCACCA CTCTCTCGTG TTGCGGTGAG TGTTAAAGAG TTCAGAAATG    300
ATGCCGCTTC AGGTTTGTCC TGTGAGTGC TGATTTCTGG TCTTTTGACC GGTACGAAAA    360
TCGTTCTTTA AAAATTTGGA TATGTGATAG AAGTGACTGA TTAATTGCTT TCACTGGCAA    420
TTGATCTGGT CAAGGTAAAA TTTGTAGTTC TCAAGACGCA AATTTTCGGC GAATGTCGTC    480
TTCACGATTG AGACAGTAAC CAGATTGCTT GGGGTTATAT                    520
```

(2) INFORMATION FOR SEQ ID NO: 113:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 504 base pairs
(B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

ATCGAAGACA CCGGCTTCGT CATAAGCTCC CACACGAATT GCTTGATTCA CTTGCGAAAG	60
GCGATTGGGT TTAGACCCGA GAGTAACGAT TGGGTCTGTA GCTCAGTTGG TTAGAGCGCA	120
CCCCTGATAA GGGTGAGGTC GGCAGTTCGA ATCTGCCCAG ACCCACC AAT CGAAGGGGCC	180
ATAGCTCAGC TGGGAGAGCG CCTGCTTTGC ACGCAGGAGG TCAGCGGTTC GATCCCGCTT	240
GGCTCCACCA TTAAGTCTAG TCGCCGAAAG CTCAGAAATG AGTGTTTACC AGGATGAGGT	300
TGATTGCCTG GGTGAACAT TGATTCTGG ACTTTGCGCC AGAACTGTTC TTTAAAAATT	360
TGGGTATGTG ATAGAAGTAG ACCGATGTGT TGCTTTCCT GGCAGCATGT CGCGTCAAGG	420
TAAAAATTGC GTGTTCTCTA TGCAAAATTT CGGCGAATGT CGTCTTCAG TTATAGACAG	480
TAACCAGATT GCTTGGGGTT ATAT	504

(2) INFORMATION FOR SEQ ID NO: 114:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 499 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

ATCGAAGACT TCAGCTTCTT CATAAGTTCC CACACGAATT GCTTGATTCA CTTGCGAAAA	60
GCGATTGGGT TGAGACCCGA GAGTGACGAT TGGGTCTGTA GCTCAGTTGG TTAGAGCGCA	120
CCCCTGATAA GGGTGAGGTC GGCAGTTCGA ATCTGCCCAG ACCCACC AAT TGTCGGGATG	180
GCCAGTGTCA AATGGGGCCA TAGCTCAGCT GGGAGAGCGC CTGCTTTGCA CGCAGGAGGT	240
CAGGAGTTCG ATCCTCCTTG GCTCCACCAT CAACTCACGA TCGCTGAAAG CTCAGAAATG	300
AACATTGGTA GTTCAATGTT GATTTCTGGT CTTTGCGCCA GAACTGTTCT TTTAAAAATT	360
GGGTATGTGA TAGAAGTGAC TAACAGCGTG TTTCACTGCA CGTTGTTAAT CAAGGCAAAA	420
TTTGCGAGTT CAAGCGCGAA TTTTCGGCGA ATGTCGTCTT CACGTTACGA ATCTATAACC	480
AGATTGCTTG GGGTTATAT	499

(2) INFORMATION FOR SEQ ID NO: 115:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 468 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 115:

ATCGACGACA TCAGCTGTCT CATAAGCTCC CACACGAATT GCTTGATTCA TTGAAGAAGA	60
CGATTAGGTT AGCAACCTTC GATTGGGTCT GTAGCTCAGT TGGTTAGAGC GCACCCCTGA	120
TAAGGGTGAG GTCGGCAGTT CGAATCTGCC CAGACCCACC AATTGCTGG GGCCATAGCT	180
CAGCTGGGAG AGCGCCTGCC TTGCACGCAG GAGGTCAGCG GTTCGATCCC GCTTGGCTCC	240
ACCACCCCGC TTGCCAGTTT GTCAAAGCTT AGAAATGAAT ATTCGCGTCG AATATTGATT	300
TCTGAACCTT ATCAGAATCG TTCTTTAAAA ATTTGGGTAT GTGATAGAAA GATAGACTGG	360
ACAGCACTTT CACTGGTGTG TGTCAGGCT AAGGTAAAAT TTGTGAGTAA TTACAAGTTT	420
TCGGCGAATG TTGCTTCAC AGTATAACCA GATTGCTTGG GGTATAT	468

(2) INFORMATION FOR SEQ ID NO: 116:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 246 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 116:

TAAGGAAAAG GAAACCTGTG AGTTTTCGTT CTTCTCTGTT TGTTCACTTT TGAGAGGTTA	60
ATTCTTCTCT ATACTGTTTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA AAGTTAGCAT	120
AAATAGGTAA CTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TGATTGGAAG TATCATCGCT GATACGAAAA ATCAGAAAAA CAACCTTTAC TTCATCGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 117:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 246 base pairs
 (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 117:

CTAAGGAAAA GGAAACCTGT GAGTTTTTCGT TCTTCTCTAT TTGTTTCAGTT TTGAGAGGTT	60
AGTACTTCTC AGTATGTTTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA AAGTTAGCAT	120
AGATAATTTA TTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TGATTGGAAG TATCATCGCT GATACGGAAA ATCAGAAAAA CAACCTTTAC TTCGTAGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 118:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 246 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

TAAGGAAAAG GAAACCTGTG AGTTTTTCGTT CTTCTCTGTT TGTTCAGTTT TGAGAGGTTA	60
TTACTTCTCT GTATGTTTGT TCTTTGAAAA CTAGATAAGA AAGTTAGTAA AGTTAGCATA	120
AGTAGTGTA CTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA ATCTTTCATC	180
TAATTCGACG TATCATCGCT GATACAGACA ATTAGAAAA CAACCTTTAC TTCGACGAAG	240
TAAATT	246

(2) INFORMATION FOR SEQ ID NO: 119:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 363 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

GGCCTATAGC TCAGCTGGTT AGAGCGCACG CCTGATAAGC GTGAGGTCGA TGGTTCGAGT	60
CCATTTAGGC CCACTTTTTTC TTTCTGACAG AAGAAACACT GTATAACCTA TTTAAGGGGC	120
CTTAGCTCAG CTGGGAGAGC GCCTGCTTTG CACGCAGGAG GTCAGCGGTT CGATCCCCT	180
AGGCTCCACC AAAATTGTTC TTTGAAAAC AGATAAGAAA GTTAGTAAAG TTAGCATAAA	240
TAGGTAAC TA TTTATGACAC AAGTAACCGA GAATCATCTG AAAGTGAATC TTTTCATCTGA	300
TTGGAAGTAT CATCGCTGAT ACGAAAAATC AGAAAAACAA CCTTTACTTC ATCGAAGTAA	360
ATT	363

(2) INFORMATION FOR SEQ ID NO: 120:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 496 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

TAAGGAAAAG GAAACCTGTG AGTTTTCGTT CTTCTCTATT TGTTTCAGTTT TGAGAGGTTA	60
CTCTCTTTTA TGTCAGATAA AGTATGCAAG GCACTATGCT TGAAGCATCG CGCCACTACA	120
TTTTTGACGG GCCTATAGCT CAGCTGGTTA GAGCGCACGC CTGATAAGCG TGAGGTCGAT	180
GGTTCGAGTC CATTTAGGCC CACTTTTTCT TCTGACATA AGAAATACAA ATAATCATA	240
CCTTTTACGG GGCCTTAGCT CAGCTGGGAG AGCGCCTGCT TTGCACGCAG GAGGTCAGCG	300
GTTTCGATCCC GCTAGGCTCC ACCAAAATTG TTCTTTGAAA ACTAGATAAG AAAGTTAGTA	360
AAGTTAGCAT AGATAATTTA TTATTTATGA CACAAGTAAC CGAGAATCAT CTGAAAGTGA	420
ATCTTTCATC TGATTGGAAG TATCATCGCT GATACGGAAA ATCAGAAAAA CAACCTTTAC	480
TTCGTAGAAG TAAATT	496

(2) INFORMATION FOR SEQ ID NO: 121:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 498 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

TAAGGAAAAG GAAACCTGTN AGTTTNCGTN CTTCTCTGTT TGTNCAGTTT TNAGAGGTTA	60
CTCTCTTTNA TGTCAGATAA AGTACGCACG GCACGTTGCC TTGGGCAAAG AGCCACTACA	120
TTATTGACGG GCCTATAGCT CAGCTGGTTA GAGCGCACGC CTGATAAGCG TGAGGTCGAT	180
GGTTCGAGTC CATTAGGCC CACTTTTTCT TTCTGACAGA AGAAATCATT TGCACATCCT	240
ATTAATAAGG GNCCTTAGCT CAGCTGGGAG AGCGCCTGCT TTGCACGCAG GAGGTCAGCG	300
GTTTCGATCCC GCTAGGCTCC ACCCAAATT GTTCTTTGAA AACTAGATAA GAAAGTTAGT	360
AAAGTTAGCA TAAGTAGTAT AACTATTTAT GACACAAGTA ACCGAGAATC ATCTGAAAGT	420
GAATCTTTCA TCTAATTCGA CGTATCATCG CTGATACAGA CAATTNGAAA AACCACTTTT	480
ACTTCGACGA AGTAAATT	498

(2) INFORMATION FOR SEQ ID NO: 122:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 229 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

TAAGGATAAG GATAACTGTC TTAGGACGGT TTGACTAGGT TGGGCAAGCG TTTTTTTAAT	60
CTTGATTTCT ATTCCTTTTG CATTGTTAAG CGTTGTTTCC AAAACATTTA GTTACGATC	120
AAGTATGTTA TGTAATAAAT ATGGTAACAA GTAAATTCAC ATATAATAAT AGACGTTTAA	180
GAATATATGT CTTTAGGTGA TGTTAACTTG CATGGATCAA TAATTTACA	229

(2) INFORMATION FOR SEQ ID NO: 123:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 248 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

TAAGGATAAG GAAGAAGCCT GAGAAGGTTT CTGACTAGGT TGGGCAAGCA TTTATATGTA	60
---	----

AGAGCAAGCA TTCTATTTCA TTTGTGTTGT TAAGAGTAGC GTGGTGAGGA CGAGACATAT	120
AGTTTGTGAT CAAGTATGTT ATTGTAAAGA AATAATCATG GTAACAAGTA TATTCACGC	180
ATAATAATAG ACGTTTAAAGA GTATTTGTCT TTTAGGTGAA GTGCTTGCAT GGATCTATAG	240
AAATTACA	248

(2) INFORMATION FOR SEQ ID NO: 124:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 224 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

CAAATGGAGT TTTTATTTT TATTTATCTT AAACACCCAT TAATTTTTC GGTGTTAAAA	60
CCCAAATCAA TGTTTGGTCT CACAACTAAC ACATTTGGTC AGTTTGTATC CAGTTCTGAA	120
AGAATGTTTT TGAACAGTTC TTTCAAACT GAAAACGACA ATCTTTCTAG TTCCAAAAAT	180
AAATACCAAA GGATCAATAC AATAAGTTAC TAAGGGCTTA TGGT	224

(2) INFORMATION FOR SEQ ID NO: 125:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 252 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

CTAATGAAGT TTTTACTTT TTCTTTTCAT CTTAATAAA GATAAATACT AAACAAAACA	60
TCAAAATCCA TTTATTTATC GGTGGTAAAT TAAACCCAAA TCCCTGTTTG GTCTCACAAC	120
TAACATATTT GGTGAGATTG TATCCAGTTC TGAAAGAACA TTTCCGCTTC TTTCAAACT	180
GAAAACGACA ATCTTTCTAG TTCCAAATAA ATACCAAAGG ATCAATACAA TAAGTTACTA	240
AGGGCTTATG GT	252

(2) INFORMATION FOR SEQ ID NO: 126:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 608 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

AACGAAAGAT TGACGATTGG TAAGAATCCA CAACAAGTTG TTCTTCATAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTGAGA CCCACCATGA CTTTGACTGG TTGAAGTTAT AGATAAAAGA TACATGATTG	180
ATGATGTAAG CTGGGGACTT AGCTTAGTTG GTAGAGCGCC TGCTTTGCAC GCAGGAGGTC	240
AGGAGTTCGA CTCTCCTAGT CTCCACCAGA ACTTAAGATA AGTTCGGATT ACAGAAATTA	300
GTAAATAAAG ATTGAGATCT TGGTTTATTA ACTTCTGTGA TTTCATTATC ACGGTAATTA	360
GTGTGATCTG ACGAAGACAC ATTAATCAT TAACAGATTG GCAAAATTGA GTCTGAAATA	420
AATTGTTTAC TCAAGAGTTT AGGTTAAGCA ATTAATCTAG ATGAATTGAG AACTAGCAAA	480
TTAACTGAAT CAAGCGTTTT GGTATGTGAA TTTAGATTGA AGCTGTACAG TGCTTAAGTG	540
CACAGTGCTC TAAACTGAAA TGTTGAAGTT ACTAACTTGT AGGTAACATC GACTGTTTGG	600
GGTTGTAT	608

(2) INFORMATION FOR SEQ ID NO: 127:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 269 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 127:

AACGAAAGAT TGACGATTGG TAAGAATCCA CGACAAGTTG TTCTTCATAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTGAGA CCCACCATGA CTTTGACTGG TTGAAGTTAT AGAAAAGAAG ATACATAACT	180
GATGATGTAA GCTGGGGACT TAGCTTAGTT GGTAGAGCGC CTGCTTTGCA CGCAGGAGGT	240
CAGGAGTTCG ACTCTCCTAG TCTCCACCA	269

(2) INFORMATION FOR SEQ ID NO: 128:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 249 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 128:

AACGAAAGAT TGATGGCCGG TAAGAATCCA CAACAAGTTG TTCTTGAAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTGAGA CCCACCAAAT CTGAAAGATA TGTCGTTTCAT TATGATTAAA GCTGGGGACT	180
TAGCTTAGTT GGTAGAGCGC CTGCTTTGCA CGCAGGAGGT CAGGAGTTCG ACTCTCCTAG	240
TCTCCACCA	249

(2) INFORMATION FOR SEQ ID NO: 129:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 283 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 129:

AACGAAAGAT TGACGATTGG TAAGAATCCA CAACAAGTTG TTCTTCATGA CGATGTATCT	60
GAGGGTCTGT AGCTCAGTTG GTTAGAGCAC ACGCTTGATA AGCGTGGGGT CACAAGTTCA	120
AGTCTTGTC A GACCCACCAA ATCTGACTAA CAAGCATTAT TAAATGCTGA ATACAGAAAA	180
ACAGAGACAT TGACTTATTG ATAAGCTGGG GACTTAGCTT AGTTGGTAGA GCGCCTGCTT	240
TGCACGCAGG AGGTCAGGAG TTCGACTCTC CTAGTCTCCA CCA	283

(2) INFORMATION FOR SEQ ID NO: 130:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 283 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 130:

AACGAAAGAT TGGTGACCGG TAAGAATCCA CAACAAGTTG TTCTTCGAAG ATGTATCTGA	60
GGGTCTGTAG CTCAGTTGGT TAGAGCACAC GCTTGATAAG CGTGGGGTCA CAAGTTCAAG	120
TCTTGTGAGA CCCACCACTA CTGACGAAGT GATGAATAAT CACAAGCTGC TAGATGAAAA	180
GATATGTCGT TCATTATGAT TAAAGCTGGG GACTTAGCTT AGTTGGTAGA GCGCCTGCTT	240
TGCACGCAGG AGGTCAGGAG TTCGACTCTC CTAGTCTCCA CCA	283

(2) INFORMATION FOR SEQ ID NO: 131:

(1) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 808 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 131:

TAAGGAAGAT CGAGAATTGG AAAGAGGTCG GATTTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGGC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GCCCATCAGG GCCGACGGCC GGTCCGGCCTT GCNAAGCTTC GCTTCGGGGT	240
GGATCTGTGG ATCGCGTAGT AGCGTTTGCG TCGGTATCTG GGCTTGTAGC TCAGTTGGTT	300
AGAGCACACG CTTGATAAGC GTGGGGTCGG AGGTTCAAGT CCTCCCAGGC CCACCAAGTT	360
ACTTGATGAG GGGCCGTAGC TCAGCTGGGA GAGCACCTGC TTTGCAAGCA GGGGGTCGTC	420
GGTTCGATCC CGTCCGGCTC CACCATCATG TTGGTGTGTA GACGGATATT GGCAATCAAC	480
AAAAGAAAGA AACAAAGTTTG CGGACTNTTA CGAAAGTCTG CCTGTTCTGT ATGAAATCGT	540
GAAGAGAAGA TGTAATCGGA TCAACTGAAG AGTTGATGTC GCAAGAAGCT TGCTCAAGCC	600
TTGCATAATG ATTGATGTGT TTAACCGCCA TCACCGATTG TATCTCGAGA AGCTGGTCTT	660
TCTGCTGATA CTGTTGAAAC GAGCATTTGC AGTCGAATGG CAACATTCGG CGTCGCATAA	720
TGCGGCTTTA AGAGCTGAGT TTTGATGGAT ATTGGCAATG AGAGTGATCA AGTGTCTTAA	780
GGGCATTGGT GGATGCCTTG GCATGCAC	808

(2) INFORMATION FOR SEQ ID NO: 132:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 808 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA
(iii) HYPOTHETICAL: NO
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 132:

TAAGGAGGAT CGAGAATTGG AAAGAGGCCG GATTTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGNC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GNCCATCAGG GCCGACGGCC GGTGGGCCCTT GCGAAGCTTC GCTTCGGGGT	240
GGATCTGTGG ATCGCGTAGT AGCGTTTGCG TCGGTATCTG GGCTTGTAGC TCAGTTGGTT	300
AGAGCACACG CTTGATAAGC GTGGGGTCGG AGGTTCAAGT CCTCCCAGGC CCACCAAGTT	360
ACTTGATGAG GGGCCGTAGC TCAGCTGGGA GAGCACCTGC TTTGCAAGCA GGGGGTCGTC	420
GGTTCGATCC CGTCCGGCTC CACCATCATG TTGGTGTGA GACGGATATT GGCAATCAAC	480
AAAAGAAAGA AACAAAGTTTG CGGACTNTTA CGAAAGTCTG CCTGTCTCTG ATGAAATCTG	540
GAAGAGAAGA TGTAAATCGGA TCAACTGAAG AGTTGATGTC GCAAGAAGCT TGCTCAAGCC	600
TTGCATAATG ATTGATGTGT TTAACCGCCA TCACCGATTG TATCTCGAGA AGCTGGTCTT	660
TCTGCTGATA CTGTTGAAAC GAGCATTTCG AGTCGAATGG CAACATTCGG CCGCCATTA	720
TGCGGCTTTA AGAGCTGAGT TTTGATGGAT ATTGGCAATG AGAGTGATCA AGTGCTCTTA	780
GGGCATTGGT GGATGCCTTG GCATGCAC	808

(2) INFORMATION FOR SEQ ID NO: 133:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 353 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA
(iii) HYPOTHETICAL: NO
(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 133:

CCTTAAAGAA CTGTTCTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAG TAAATAGCAA	60
GGCGTCTTGC GAAGCAGACT GATACGTCCC CTTCGTCTAG AGGCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCTT AGGGGACGCC ACTTGCGCGG TAATGTGTGA	180
AAGCGTTGCC ATCAGTATCT CAAAACCTGAC TTACGAGTCA CGTTTGAGAT ATTTGCTCTT	240
TAAAAATCTG GATCAAGCTG AAAATTGAAA CACAGAACAA CGAAAGTTGT TCGTGAGTCT	300

CTCAAATTTT CGCAACACGA TGATGAATCG TAAGAAACAT CTTGCGGGTTG TGA

353

(2) INFORMATION FOR SEQ ID NO: 134:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 515 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 134:

CCTTAAAGAA CTGTTCTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCGTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATTCACG CTTGTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATATCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCGA AGTTTTGCTC TTTAAAAATC TGGATCAAGC	420
TGAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAATT TTCGCAACAC	480
GATGATGAAT CGTAAGAAAC ATCTTCGGGT TGTGA	515

(2) INFORMATION FOR SEQ ID NO: 135:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 353 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 135:

CCTTAAAGAA GCGTACTTTG CAGTGCTCAC ACAGATTGTC TGATGAAAAG TAAATAGCAA	60
GGCGTCTTGC GAAGCAGACT GATACGTCCC CTTCGTCTAG AGGCCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCTT AGGGGACGCC ACTTGCGCGG TAATGTGTGA	180
AAGCGTTGCC ATCAGTATCT CAAACTGAC TTACGAGTCA CGTTTGAGAT ATTTGCTCTT	240
TAAAAATCTG GATCAAGCTG AAAATTGAAA CACAGAACAA CGAAAGTTGT TCGTGAGTCT	300
CTCAAATTTT CGCAACACGA TGATGAATCG TAAGAAACAT CTTGCGGGTTG TGA	353

(2) INFORMATION FOR SEQ ID NO: 136:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 481 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 136:

CCTTAAAGAA CTGTTCTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCGTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATTCCACG CCTTGTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATCTCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCGA AGTTTTGCTC TTTAAAAATC TGGATCAAGC	420
TGAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAATT TTCGCAACAC	480
	481

(2) INFORMATION FOR SEQ ID NO: 137:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 392 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 137:

CCTTAAAGAA GCGTACTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAG TGAATAGCAA	60
GGCGTCTTGC GATTGAGACT TCAGTGTCCT CTTCGTCTAG AGGCCAGGA CACCGCCCTT	120
TCACGGCGGT AACAGGGGTT CGAATCCCCT AGGGGACGCC AGCGTTCAAA CTGATGAGGT	180
CAACCTCCA GGGACGCCAC TTGCTGGTTT GTGAGTGAAA GTCACCTGCC TTAATATCTC	240
AAACTGACT TACGAGTCAC GTTTGAGATA TTTGCTCTTT AAAAACTGG ATCAAGCTGA	300
AAATTGAAAC ACAGAACAAC GAAAGTTGTT CGTGAGTCTC TCAAATTTTC GCAACACGAT	360

(2) INFORMATION FOR SEQ ID NO: 138:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 515 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 138:

CCTTAAAGAA ACGGTCTTTG AAGTGCTCAC ACAGATTGTC TGATGAAAAA CGAGCAGTAA	60
AACCTCTACA GGCTTGTAGC TCAGGTGGTT AGAGCGCACC CCTGATAAGG GTGAGGTCGG	120
TGGTTCAAGT CCACTCAGGC CTACCAAATT TTCCCTGAAT ACTGCGTTGT GAAATAACTC	180
ACATACTGAT GTATGCTTCG TTATTCCACG CCTTGCTCTCA GGAAAAATTA TCGGTAAAGA	240
GGTTCTGACT ACACGATGGG GCTATAGCTC AGCTGGGAGA GCGCCTGCTT TGCACGCAGG	300
AGGTCTGCGG TTCGATCCCG CATAGCTCCA CCATCTCGTG AGTGTTTACG AAAAAATACT	360
TCAGAGTGTA CCTGAAAGGG TTCACTGCCA AGTTTTGCTC TTTAAAAATC TGGATCAAGC	420
TGAAAATTGA AACACAGAAC AACGAAAGTT GTTCGTGAGT CTCTCAAATT TTCGCAACAC	480
GATGATGAAT CGTAAGAAAC ATCTTCGGGT TGTGA	515

(2) INFORMATION FOR SEQ ID NO: 139:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 365 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 139:

CTAAGGATAT ATTCGGAACA TCTTCTTCGG AAGATGCGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTTTGA	120
AAATAAAGCA GTATGCGAGC GCTTGACTAA AAAAAATTGT ACATTGAAAA CTAGATAAGT	180
AAGTAAATA TAGATTTTAC CAAGCAAAC CGAGTGAATA AAGAGTTTAA AATAAGCTTG	240
AATTCATAAG AAATAATCGC TAGTGTTTGA AAGAACACTC ACAAGATTAA TAACGCGTTT	300
AAATCTTTTT ATAAAAGAAC GTAACCTCAT GTTAACGTTT GACTTATAAA AATGGTGGAA	360

(2) INFORMATION FOR SEQ ID NO: 140:

(1) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 548 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 140:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTATGC	120
GAGCNCCTGA CAATCTATTC TTTTAAAGA AAGCGGTTGT CAGACAATGC ATTAAGAAAA	180
ATTAAAGCGG AGTTTACTTT TGTAATGAG CATTTGATTT TTTGAAAATA AAGCAGTATG	240
CGAGCGCTTG ACTAAAAAGA AATTGTACAT TGAAAAC TAGTAAGT AAAATATAGA	300
TTTACCAAG CAAACCGAG TGAATAAGA GTTTTAAATA AGCTTGAATT CATAAGAAAT	360
AATCGCTAGT GTTCGAAAGA AACTCACAA GATTAATAAC GCGTTTAAAT CTTTTATAA	420
AAGAAAACGT TTAGCAGACA ATGAGTTAAA TTATTTTAAA GCAGAGTTTA CTTATGTAAA	480
TGAGCATTTA AAATAATGAA AACGAAGCCG TATGTGAGCA TTTGACTTAT AAAAATGGTG	540
GAAACATA	548

(2) INFORMATION FOR SEQ ID NO: 141:

(1) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 471 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 141:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTATGC	120
GAGCGCTTGA CAATCTATTC TTTTAAAGA AAGCGGTTGT CAGACAATGC ATTAAGAAAA	180
ATTAAAGCGG AGTTTACTTT TGTAATGAG CATTTGATTT TTTGAAAATA AAGCAGTATG	240

CGAGCGCTTG ACTAAAANGA AATTGTACAT TGAAAACTAG ATAAGTAAGT AAAATATAGA	300
TTTTACCAAG CAAAACCGAG TGAATAAAGA GTTTTGAATA AGCTTGAATT CATAAGAAAT	360
AATCGCTAGT GTTCGAAAGA AACTCACAA GATTAATAAC GCGTTTAAAT CTTTTTATAA	420
AAGAACGTAA CTTTCATGTTA ACGTTTGACT TATAAAAATG GTGGAAACAT A	471

(2) INFORMATION FOR SEQ ID NO: 142:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 383 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 142:

CTAAGGATAT ATTCGGAACA TCTTCTTCAG AAGATGCGGA ATAACGTGAC ATATTGTATT	60
CAGNTTTGAA TGTTTATTTA ACATTCAAAA AATGGGCCCTA TAGCTCAGCT GGTTAGAGCG	120
CACGCGTGAT AAGCGTGAGG TCGGTGGTTC GAGTCCACTT AGGCCCCACCA TTATTTGTAC	180
ATTGAAAACCT AGATAAGTAA GTAAAATATA GATTTTACCA AGCAAAACCG AGTGAATAAA	240
GAGTTTTAAA TAAGCTTGAA TTCATAAGAA ATAATCGCTA GTGTTCGAAA GAACACTCAC	300
AAGATTAATA ACGCGTTTAA ATCTTTTTAT AAAAGAACGT AACTTCATGT TAACGTTTGA	360
CTTATAAAAA TGGTGGAAAC ATA	383

(2) INFORMATION FOR SEQ ID NO: 143:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 351 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 143:

CTAAGGATAT ATTCGGAACA TCTTCYTCAG AAGATGCGGA ATAATGTGAC ATATTGTATT	60
CAGTTTTGAA TGTTTATTTA ACATTCAAAT ATTTTTTGGT TAAAGTGATA TTGCTTATGC	120
GAGCGCTTGA CTAAAAAGAA ATTGTACATT GAAAACCTAGA TAAGTAAGTA AAANTATAGA	180
TTTTACCAAG CAAAACCGAG TGAATAAAGA GTTTTAAATA AGCTTGAATT CATAAGAAAT	240
AATCGCTAGT GTTCGAAAGA AACTCACAA GATTAATAAC GCGTTTAAAT CTTTTTATAA	300

AAGAACGTAA CTCATGTGA ACGTTTGACT TATAAAAATG GTGGAACAT A

351

(2) INFORMATION FOR SEQ ID NO: 144:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 263 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 144:

CTAAGGATAT ATTCCGAACA TCTTCTACGA AGATGAGGGA ATAACGTGAC ATATTGTATT	60
CAGTTTTGAA TGTATTATAA CATTCATTG TACATTGAAA ACTAGATAAG TAAGTAAGAT	120
TTTACCAAGC AAAACCGAGT GAATAGAGTT TTAAATAAGC TTGAATTCAT AAATAATCGC	180
TAGTGTTCGA AAGACNTCCA CAAGATTAAT AACTAGTTTT AGCTATTAT TTTGAATAAC	240
AATTCAAAAT ATGGTGGGAC ATA	263

(2) INFORMATION FOR SEQ ID NO: 145:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 247 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 145:

AAGGATAAGG AACTGCACAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAAGA GTTTATGACT GAAAGGTCAA	240
AAAATAA	247

(2) INFORMATION FOR SEQ ID NO: 146:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 375 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 146:

AAGGAAATGG AACACGTTTA TCGTCTTATT TAGTTTTGAG AGGTCTTGTG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTNGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATCAGGATA CANTCCTACT AAACCTTAATA CAAGTGAAGT TGAACACGCA ACTCACTTCC	180
TAGGAAAATA GACAATCTTC GCTTGTGTGC AAGGCACACA TGGTCAGATT CCTAATTTTC	240
TACAGAAGTT TCGCTAAAGC GAGCGTTGCT TAGTATCCTA TATAATAGTC CATNGAAAAT	300
TGAATATCTA TATCAAATTC CACGATCTAG AAATAGATTG TGGAAACGTA ACAAGAAATT	360
AACCCGNAAA CGCTG	375

(2) INFORMATION FOR SEQ ID NO: 147:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 244 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 147:

AAGGATAAGG AACTGCACAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAGAAA	240
ATAA	244

(2) INFORMATION FOR SEQ ID NO: 148:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 284 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 148:

CTAAGGATAT ATTCCGAACA TCTTCTTACG AAGATGCAGG AATAACATTG ACATATTGTA	60
TTCAGNTGTG AATGCTCATT GGAGNATTCA TNGCATNATT TGGTNCATTG ACANCTAGAT	120
AAGNAAGTAA AATTTATGAT TTTACCAAGC AAAACCGAGT GAATTAGAGT TNTNNAACAA	180
GCTTTGATTT CAAAAAGAAA TAATCGCTAG TGTTGAAAAG AACACTCACA GATTANTAAC	240
ATCTTGGGTT TTCACCCGAC TTGTTCTGNT CGAAAGTCAA AAAA	284

(2) INFORMATION FOR SEQ ID NO: 149:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 246 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 149:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAAA	240
AAATAA	246

(2) INFORMATION FOR SEQ ID NO: 150:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 247 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 150:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTT GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAGA	240

AAAATAA

247

(2) INFORMATION FOR SEQ ID NO: 151:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 247 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 151:

AAGGAAAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTG TG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAA CGCTGTAGTA TTAATAAGAG TTTATGACTG AAAGGTCAGA	240
AAAATAA	247

(2) INFORMATION FOR SEQ ID NO: 152:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 244 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 152:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTG TG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAGAAA	240
ATAA	244

(2) INFORMATION FOR SEQ ID NO: 153:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 243 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 153:

AAGGATAAGG AACTGCGCAT TGGTCTTGTT TAGTCTTGAG AGGTCTTGTG GGGCCTTAGC	60
TCAGCTGGGA GAGCGCCTGC TTTGCACGCA GGAGGTCAGC GGTTCGATCC CGCTAGGCTC	120
CATTGGTGAG AGATCACCAA GTAATGCACA TTGAAAATTG AATATCTATA TCAAATAGTA	180
ACAAGAAAAT AAACCGAAAC GCTGTAGTAT TAAAAGAGTT TATGACTGAA AGGTCAAAAA	240
TAA	243

(2) INFORMATION FOR SEQ ID NO: 154:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 909 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 154:

TAAGGAAGAT CGAGAATTGG AAAGAGGTCG GATTTATCCG GATGATCCTT CTCCATCTTA	60
TTAGAACATA GATCGCAGGC CAGTCAGCCT GACGATCGCT TGCAGGCGTG CCGCCTTCGT	120
TTCTCTTTCT TCATTGTTGA TTGCTCACGG GCCGTACCGC AGCTGACGCT GCTGGCCCTG	180
CGCAGGCGCG GCCCATCAGG GCCGAACGGC CGGTCGGCCT TGCNAAGCTT CGCTTCGGGG	240
TGGATCTGTG GATCGCGTAG TAGCGTTTGC GTCGGTATCT GGGCTTGTAG CTCAGTTGGT	300
TAGAGCACAC GCTTGATAAG CGTGGGGTCG GAGGTTCAAG TCCTCCCAGG CCCACCAAGT	360
TACTTGATGA GGGGCCGTAG CTCAGCTGGG AGAGCACCTG CTTTGCAAGC AGGGGGTCGT	420
CGGTTCGATC CCGTCCGGCT CCACCATCAT GTTGGTGTG AGACGGATAT TGGCAATCAA	480
CAAAAGAAAG AAACAAGTTT GCGGACTNTT ACGAAAGTCT GCCTGTTCTG TATGAAATCG	540
TGAAGAGAAG ATGTAATCGG ATCAACTGAA GAGTTGATGT CGCAAGAAGC TTGCTCAAGC	600
CTTGCATAAT GATTGATGTG TTTAACCGCC ATCACCGATT GTATCTCGAG AAGCTGGTCT	660
TTCTGCTGAT ACTGTTGAAA CGAGCATTTG CAGTCGAATG GCAACATTG GCGTCGCATA	720
ATGCGGCTTT AAGAGCTGAG TTTTGATGGA TATTGGCAAT GAGAGTGATC AAGTGTCTTA	780
AGGGCATTGG TGGATGCCTT GGCATGCAC	809

(2) INFORMATION FOR SEQ ID NO: 155:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 23 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 155:

TGGGGTGAAG TCGTAACAAG GTA

23

(2) INFORMATION FOR SEQ ID NO: 156:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 156:

CCTTTCCTC ACGGTACTGG T

21

(2) INFORMATION FOR SEQ ID NO: 157:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 277 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 157:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTA GCGGTGAGGG GTTCTCGTCT

60

GTAGTGGACG GAAGCCGGGT GCACAACAAC AAGCAAGCCA GACACACTAT TGGGTCCTGA

120

GGCAACATCT CTGTTGGTTT CGGGATGTTG TCCACCATC TTGGTGGTGG GGTGTGGTGT

180

TTGAGAATTG GATAGTGGTT GCGAGCATCA ATTGGATGCG CTGCCTTTTG GTGGCGTGTT

240

CTGTTGTGCA ATTTATTCT TTGGTTTTTG TGTTTAT

277

(2) INFORMATION FOR SEQ ID NO: 158:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 286 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 158:

```
AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT    60
GTAGTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CGGACACACT ATTGGGCCCT    120
GAGACAACAC TCGGCCGACT GAGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT    180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGCCG GATGCGTTCC CCAGTGGTGC    240
GCGTTCGTCA AAAATGTGTA ATTTTCTTT TGGTTTTTGT GTTCGT                    286
```

(2) INFORMATION FOR SEQ ID NO: 159:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 286 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 159:

```
AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT    60
GTAGTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CGGACACACT ATTGGGCCCT    120
GAGACAACAC TCGGCCGACT GAGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT    180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGACG GATGCGTTCC CCAGTGGTGC    240
GCGTTCGTCA AAAATGTGTA ATTTTCTTT TGGTTTTTGT GTTCGT                    286
```

(2) INFORMATION FOR SEQ ID NO: 160:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 279 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 160:

AAGGAGCACC ACGAGAAACA CCCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGCGGGTAC AACAAACGCCA ATCGCCGGAC ACACTATTGG GCCTGAGACA	120
ACACTCGGCC GACTGAGGTC GACGTGGTGT CCCTCCATCT TGGTGGTGGG GTGTGGTGT	180
TGAGCATTGA ATAGTGGTTG CGAGCATCTA GCCGGATGCG TTCCCCAGTG GTGCGCGTTC	240
GTCAAAAATG TGTAATTTTT CTTTGGTTTT TGTGTTTCT	279

(2) INFORMATION FOR SEQ ID NO: 161:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 288 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 161:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGAGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCCGGGT GCACAACAGC AGACAATCGC CAGACACACT ATTGGGCCCT	120
GAGACAACAC TCGGCCGACT TTGGTCGACG TGGTGTCCCT CCATCTTGGT GGTGGGGTGT	180
GGTGTTTGAG CATTGAATAG TGGTTGCGAG CATCTAGACG GATGCGTTGC CCTCGGGCCG	240
CGTGTTCGTC AAAAATGTGT AATTTTTTCT TTTGGTTTTT GTGTTCGT	288

(2) INFORMATION FOR SEQ ID NO: 162:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 289 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 162:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGAGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG GGAGCCGGGT GCACAACAAC AGGCAATCGC CAGACACACT ATTGGGCCCT	120

GAGACAACAC TCGGCCGGCT TTGAGTCGAA GTGGTGTCCC TCCATCTTGG TGGTGGGGTG	180
TGGTGTTTGA GCATTGAATA GTGGTTGCGA GCATCTAGAC GGATGCGTTG CCTTCGGGCC	240
GCGTGTCGT CAAAAATGTG TAATTTTTTC TTTTGGTTTT TGTGTTCGT	289

(2) INFORMATION FOR SEQ ID NO: 163:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 232 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 163:

AGGGAGCACC GAAACGCATC CCGCGTGGGG TGTTGGTTCG GCGTGTTGTG GCGTCGGCCG	60
AGGTGTTGGG CAGCAGGCAG TAACCCCGGA ACACTGTTGG GTTTTGAGAA CACCCGTGGT	120
GGTGTTGTGC TCCCCGTGGT GCGGGGTGTG GTGTTTGAGT GTTGGATAGT GGTTCGAGC	180
ATCTGGCRAA GACTGTGGTA AGCGGTTTTT GTTGATGTTT TCTGGTGTTC GT	232

(2) INFORMATION FOR SEQ ID NO: 164:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 279 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 164:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGGGCGGGTG CACAACAACA GCAATCGCCA GACACACTAT TGGCCCTGAG	120
ACAACACTCG GCCGACTTGG TTGAAGTGGT GTCCCTCCAT CTTGGTGGTG GGGTGTGGTG	180
TTTGAGTATT GGATAGTGGT TCGGAGCATC TAATGAACGC GTCGCCGCAA CGGTTACGTG	240
TTCGTTTTGT GTAATTTTTC TATTGGTTTT TGTGTTCGT	279

(2) INFORMATION FOR SEQ ID NO: 165:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 285 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 165:

AAGGAGCACC ACGAGAAACA CTCCAATTGG TGGGGTGTGA GCCGTGAGGG GTTCTCGTCT	60
GTA GTGGACG AGGGCCGGGT GCACAACAAC AGGCAATCGC CAGACACACT ATTGGCCCTG	120
AGACAACACT CGGCCGACTT TGGTCGAAGT GGTGTCCCC CATCTTGGTG GTGGGGTGTG	180
GTGTTTGAGT ATTGGATAGT GGTTGCGAAC ATCTAAATGA ACGCGTTGCC GGCAACGGTT	240
ACGTGTTTCGT TTTAGTGTA TTTTCTAAT GGTTTTTGTG TTCGT	285

(2) INFORMATION FOR SEQ ID NO: 166:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 384 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 166:

AAGGAGCACC ACGAGACCTG GGCCGGCCCC GCAGATCGCG GGATCAGCTG AGCTTTCAGG	60
CGATTCGTTG GATGGCCTCG CACCTGTAGT GGGTGGGGT CTGGTGCACT CAACAACTT	120
GGCGTGGGAT GCGGGAAAGC ATCTGCGGAA AATCATCAGA CACACTATTG GGCTTTGAGA	180
CAACAGGCCC GCAGCCTGCC CGTTGGGGGC AGGGGTGTGT TGTGCTCA CTTTGGTGGT	240
GGGGTGGTG TTTGATTTGT GGATAGTGGT TGCGAGCATC TAGCGCGCAG AATGTGTGGT	300
CTCACTCCTT GTGGGTGGG CCTGGTTTG TGTGCGATTG ATGTGCAATT TCTTTTGAAA	360
CTCATTTTTT GGTTTTTGTG TTGT	384

(2) INFORMATION FOR SEQ ID NO: 167:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 295 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 167:

AAGGAGCACC ACGAAAACT CCCCAATTGG TGGGGTGTA A GCGGTGAGGG GTTCCCGTCT	60
GTAGTGGACG GGGGCCGGGT GCGCAACAGC AAGCGAAACG CCGGACACAC TATTGGGTCC	120
TGAGGCAACA CTCGGGTTTG TCCCCCTCAG GGATTTTCTG GGTGTTGTCC CACCATCTTG	180
GTGGTGGGGT GTGGTGTTC AGAATTGGAT AGTGGTTGCG AGCATCAAAT GGATGCGTTG	240
CCCCTACGGG TAGCGTGTTT TTTTGTGCAA TTTTATTCTT GGTTTTTGTG TTTGT	295

(2) INFORMATION FOR SEQ ID NO: 168:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 279 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 168:

AAGGAGCACC ACGAGAAGCA CTCCAAGTGG TGGGGTGCAA GCGGTGAGGG GTTCTCGTCT	60
GTAGTGGACG AGAGCCGGGT GCGCGACAAC GAACGAGCCA GACACACTAT TGGGTCCTGA	120
GGCAACACTC GGGCTTGGCC AGAGCTGTTG TCCCACCATC TTGGTGGTGG GGTGTGGTGT	180
TTGAGAATTG GATAGTGGTT GCGAGCATCA AATGGATGCG TTGCCCTTAC GGGTGGCGTG	240
TTCTTTTGTG CAATTTTATT CTTTGGTTTT TGTGTTTGT	279

(2) INFORMATION FOR SEQ ID NO: 169:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 286 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 169:

AAGGAGCACC ACGAAAAACA CCCCAACTGG TGGGGTGTA A GCGGTGAGGG GCTCCCGTCT	60
GTAGTAGACG GCGCGCCGGT GCGCAACAGC AAGCGAGCCA GACACACTAT TGGGTCCTGA	120
GGCAACACTC GGGCTTGTCT TGGACTCGTC CAAGAGTGTT GTCCCACCAT CTTGGTGGTG	180
GGGTGTGGTG TTTGAGAATT GGATAGTGGT TGCGAGCATC ACTGGATGCG TTGCCCCCAG	240

GGGTAGCGTG TTCTTTTGTG CAATTIATTC TGGTTTTTGT GTIAGT

286

(2) INFORMATION FOR SEQ ID NO: 170:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 265 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 170:

AAGGAGCACC ACGAAAAACA CTCCGCATCC GGTGGGGTGT GAGCCGTGAG GGAGCCCGTG	60
CCTGTAGTGG GTGTGGGTTG GGTGCGCGAC AACAAATGGG AAAAATCGCT GGGCACACTA	120
TTGGGCTTTG AGGCAACACC TGGTTTGTTC TGGGTGGTGT CGCTCCATCT TGGTGGTGGG	180
GTGTGGTGTG TGAGTTGTGG ATAGTGGTTG CGAGCATCTA AGCAAAAGCT GTTGTTTGAC	240
GGTTTTTGTC GAGTGTGTGT TGTGT	265

(2) INFORMATION FOR SEQ ID NO: 171:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 299 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 171:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA GCGTGAGGG GTTCTCATCT	60
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG CCAGACACAC TGTGGGTCC	120
TGAGGCAACA CTCAGGCTTG TCCATGTTG GGCTTGATCG GGTGCTGTCC CCCCATCTTG	180
GTGGTGGGGT GTGGTGTTC AGTATTGGAT AGTGGTTGCG AGCATCTAAA TGGATACGTT	240
GCCAGTAATG GTGGCGTATT CATTGAAAT GTGTAATTT CTTCTTTGGT TTTGTGTGT	299

(2) INFORMATION FOR SEQ ID NO: 172:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 299 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 172:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA	60
AGCCGTGAGGG GTTCTCATCT	
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG	120
CCAGACACAC TGTGGGGTCC	
TGAGGCAACA CTCAGGCTTG TCCCATGTTG GGCTTGATCG	180
GGTGCTGTCC CCCCATCTTG	
GTGGTGGGGT GTGGTGTTTG AGTATTGGAT AGTGGTTGCG	240
AGCATCTAAA TGGATACGTT	
GCCAGTAATG GTGGCGTGTT CATTGAAAAT GTGTAATTTT	299
CTTCTTTGGT TTTGTGTGT	

(2) INFORMATION FOR SEQ ID NO: 173:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 298 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 173:

AAGGAGCACC ACGAAAAACA CTCCAATTGG TGGGGTGTA	60
AGCCGTGAGGG GTTCTCATCT	
GTAGTGGACG AGAGCCGGGT GCACAACAGC AAATGAATCG	120
CCAGACACAC TGTGGGGTCC	
TGAGGCAACA CTCAGGCTTG TCCCATGTTG GGCTTGATCG	180
GGTGCTGTCC CCCCATCTTG	
GTGGTGGGGT GTGGTGTTTG AGTATTGGAT AGTGGTTGCG	240
AGCATCTAAA TGGAACGTTG	
CCAGTAATGG TGGCGTGTT ATTGAAAATG TGTAATTTT	298
CTTCTTTGGT TTGTGTGT	

(2) INFORMATION FOR SEQ ID NO: 174:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 300 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 174:

AAGGAGCACC ATTTCTCAGT CGAATGAACT GAGAACATAA	60
AGCGAGTATC TGTAGTGGAT	

ACATGCTTGG TGAATATGTT TTATAAATCC TGTCCACCCC GTGGATAGGT AGTCGGCAAA	120
ACGTCGGACT GTCATAAGAA TTGAAACGCT GGCACACTGT TGGGTCCTGA GGCAACACAT	180
TGTGTTGTCA CCCTGCTTGG TGGTGGGGTG TGGTCCTTGA CTTATGGATA GTGGTTGCGA	240
GCATCTAAAC ATAGCCTCGC TCGTTTTTCGA GTGAGGCTGG TTTTTCGAAT TTTATTAGCT	300

(2) INFORMATION FOR SEQ ID NO: 175:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 175:

GGTTTCGGGA TGTTGTCCCA CC	22
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(2) INFORMATION FOR SEQ ID NO: 176:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 176:

CGACTGAGGT CGACGTGGTG T	21
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(2) INFORMATION FOR SEQ ID NO: 177:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 177:

GGTGTGTTGAG CATTGAATAG TGGTTGC

27

(2) INFORMATION FOR SEQ ID NO: 178:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 178:

GTTGGGCAGC AGGCAGTAAC C

21

(2) INFORMATION FOR SEQ ID NO: 179:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 179:

CCGGCAACGG TTACGTGTTT

20

(2) INFORMATION FOR SEQ ID NO: 180:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 180:

TCGTTGGATG GCCTCGCACC T

21

(2) INFORMATION FOR SEQ ID NO: 181:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs

(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 181:

ACTTGCGGTG GGATGCGGGA A

21

(2) INFORMATION FOR SEQ ID NO: 182:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 24 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 182:

CCCTCAGGGA TTTTCTGGGT GTTG

24

(2) INFORMATION FOR SEQ ID NO: 183:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 183:

GGACTCGTCC AAGAGTGTTG TCC

23

(2) INFORMATION FOR SEQ ID NO: 184:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 184:

TCGGGCTTGG CCAGAGCTGT T

21

(2) INFORMATION FOR SEQ ID NO: 185:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 185:

GGGTGCCCAA CAGCAAGCGA

20

(2) INFORMATION FOR SEQ ID NO: 186:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 19 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 186:

GATGCGTTGC CCCTACGGG

19

(2) INFORMATION FOR SEQ ID NO: 187:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 187:

CCCTACGGGT AGCGTGTCT TTTG

24

(2) INFORMATION FOR SEQ ID NO: 188:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 188:

CGGATCGATT GAGTGCTTGT CCC

23

(2) INFORMATION FOR SEQ ID NO: 189:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 189:

TCTAAATGAA CGCACTGCCG ATG

23

(2) INFORMATION FOR SEQ ID NO: 190:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (iii) HYPOTHETICAL: NO
- (iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 190:

TGAGGGAGCC CGTGCCTGTA

20

(2) INFORMATION FOR SEQ ID NO: 191:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 191:

CATGTTGGGC TTGATCGGGT GC

22

(2) INFORMATION FOR SEQ ID NO: 192:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 192:

CCTGGGTTTG ACATGCACAG

20

(2) INFORMATION FOR SEQ ID NO: 193:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 193:

GCGTAGTAGC GTTTCGTCG G

21

(2) INFORMATION FOR SEQ ID NO: 194:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 194:

CGCAAGAAGC TTGCTCAAGC C

21

(2) INFORMATION FOR SEQ ID NO: 195:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 470 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 195:

CCTAATGATA TTGATTGCGG TGAAGTGCTC ACACAGATTG TCTGATGAAA AAGTAACGAG	60
CAGAAATACC TTTATAGGCT TGTAGCTCAG GTGGTTAGAG CGCACCCCTG ATAAGGGTGA	120
GGTCGGTGGT TCAAGTCCAC TCAGGCCTAC CACTTCTCGA AGTGGAAAAG GTACTGCACG	180
TGACTGTATG GGGCTATAGC TCAGCTGGGA GAGCGCCTGC CTTGCACGCA GGAGGTCAGC	240
GGTTCGATCC CGCTTAGCTC CACCATATAG TCCTGTATTT CAATACTTCA GAGTGTACTG	300
GCAACAGTAT GCTGCGAAGT ATTTTGCTCT TTAACAATCT GGAACAAGCT GAAAATTGAA	360
ACATGACAGC TGAACTTAT CCCTCCGTAG AAGTATTGGG GTAAGGATTA ACCTGTCATA	420
GAGTCTCTCA AATGTAGCAG CACGAAAGTG GAAACACCTT CGGGTTGTGA	470

(2) INFORMATION FOR SEQ ID NO: 196:

(1) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 453 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 196:

CCTAATGATA TTGATTGCGG TGAAGTGCTC ACACAGATTG TTTGATAGAA ACGTAATGAG	60
CAAAAGCGCT ACCTGTTGAT GTAATGAGTC ACTGACTCAT GCTGATACGA ACCGATTAAG	120
ACAGTCAGTT TAATCGGATT TTCGTGTCCC CATCGTCTAG AGGCCTAGGA CACTGCCCTT	180

TCACGGCTGT AACAGGGGTT CGAATCCCTT TGGGGACGCC ATTCGATAAT GAGTGAAAGA	240
CATTATCACC GGTTCCTTGA ACCGAAAACA TCTTAAAGAT GACTCTTGGC AGTCGTGTTT	300
AAGATATTGC TCTTTAACAA TCTGGAACAA GCTGAAAATT GAAACATGAC AGCTGAAACT	360
TATCCCTCCG TAGAAGTATT GGGGTAAGGA TTAACCTGTC ATAGAGTCTC TCAAATGTAG	420
CAGCACGAAA GTGGAAACAC CTTCGGGTTG TGA	453

(2) INFORMATION FOR SEQ ID NO: 197:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 248 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 197:

TAAGGATAAG GAAGAAGCCT GAGAAGGTTT CTGACTAGGT TGGGCAAGCA TTTATATGTA	60
AGAGCAAGCA TTCTATTTC A TTTGTGTTGT TAAGAGTAGC GCGGTGAGGA CGAGACATAT	120
AGTTTGTGAT CAAGTATGTT ATTGTAAAGA AATAATCATG GTAACAAGTA TATTTCACGC	180
ATAATAATAG ACGTTTAAGA GTATTGTCT TTAGGTGAA GTGCTTGCAT GGATCTATAG	240
AAATTACA	248

(2) INFORMATION FOR SEQ ID NO: 198:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 198:

GGAAAAGGTA CTGCACGTGA CTG	23
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(2) INFORMATION FOR SEQ ID NO: 199:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 199:

GACAGCTGAA ACTTATCCCT CCG

23

(2) INFORMATION FOR SEQ ID NO: 200:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 200:

GCTACCTGTT GATGTAATGA GTCAC

25

(2) INFORMATION FOR SEQ ID NO: 201:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 201:

GAGTAGCGCG GTGAGGACGA GA

22

(2) INFORMATION FOR SEQ ID NO: 202:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 202:

CTTTTATGTC AGATAAAGTA TGCAA

25

(2) INFORMATION FOR SEQ ID NO: 203:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 203:

CGTAAAAGGG TATGATTATT TG

22

(2) INFORMATION FOR SEQ ID NO: 204:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 204:

TCGAGAATTG GAAAGAGGTC

20

(2) INFORMATION FOR SEQ ID NO: 205:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 19 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 205:

AAGAGGTCGG ATTATCCG

19

(2) INFORMATION FOR SEQ ID NO: 206:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 206:

TTCGACTGCA AATGCTCG

18

(2) INFORMATION FOR SEQ ID NO: 207:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 207:

TCTTAAAGCC GCATTATGC

19

(2) INFORMATION FOR SEQ ID NO: 208:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 208:

CCTAATGATA TTGATTCGCG

20

(2) INFORMATION FOR SEQ ID NO: 209:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 22 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 209:

ATGACAGGTT AATCCTTACC CC

22

(2) INFORMATION FOR SEQ ID NO: 210:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 210:

GGTGTGGTCC TTGACTTATG GATAG

25

(2) INFORMATION FOR SEQ ID NO: 211:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 21 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 211:

TCGGGCCGCG TGTTGTC AA A

21

(2) INFORMATION FOR SEQ ID NO: 212:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 24 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 212:

CGTTTTTCATA AGCGATCGCA CGTT

24

(2) INFORMATION FOR SEQ ID NO: 213:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 235 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 213:

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TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTGT AGAGGTTTCAT    60
CTCTCAAAAC GTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAAAA GACGAAGAGA    120
AACCGTAGGT TTTTCTTCAA CCAAACCGA GAATCAAACC GAGAAAGAAT CTTTCCGTTT    180
TCATAAGCGA TCGCACGTTT ATGAAAACAC AACACACCT TCGTAAGAAG GATGA        235
```

(2) INFORMATION FOR SEQ ID NO: 214:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 475 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 214:

```
TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTGT AGAGGTCAAT    60
GACGCTCATA CTGAGTACCA GGTGACACGT TTTTGAGGTG TCTCTTCGTA TGAGGGGCCT    120
ATAGCTCAGC TGGTTAGAGC GCACGCCTGA TAAGCGTGAG GTCGGTGGTT CGAGTCCACT    180
TAGGCCCACT TTTTGAATA AACCTTTCTT TTTTATATGT TAATAAGGGG CCTTAGCTCA    240
GCTGGGAGAG CGCCTGCTTT GCACGCAGGA GGTGAGCGGT TCGATCCCGC TAGGCTCCAC    300
CAAAGATAGT TTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAAAA GACGAAGAGA    360
AACCGTAGGT TTTTCTTCAA CCAAACCGA GAATCAAACC GAGAAAGAAT CTTTCCGTTT    420
TCATAAGCGA TCGCACGTTT ATGAAAACAC AACACACCT TCGTAAGAAG GATGA        475
```

(2) INFORMATION FOR SEQ ID NO: 215:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 463 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 215:

```
TAAGGATAAG GAAACCTGTG AATCTTTTTC CCTTCTTTTG TTCAGTTTTC AGAGGTCAAT      60
GACGCTCATA CTGAGTACCA GGTGACACGT TTTTGAGGTG TCTCTTCGTA TGAGGGGCCT      120
ATAGCTCAGC TGGTTAGAGC GCACGCCTGA TAAGCGTGAG GTCGGTGGTT CGAGTCCACT      180
TAGGCCCCACT TTTTGAATA AACCTTCTTT TTTTATATGT TAATAAGGGG CCTTAGCTCA      240
GCTGGGAGAG CGCCTGCTTT GCACGCAGGA GGTCAGCGGT TCGATCCCGC TAGGCTCCAC      300
CAAAGATAGT TTGTTCTTTG AAAACTAGAT AAGAAAAGTT AGTGTAAGAA GACGAAGAGA      360
AACCGTAGGT TTTTCTTCAA CCAAAACCGA GAAAGAATCT TTCCGTTTTT ATAAGCGATC      420
GCACGTTTAT GAAAACACAA CAACACCTTC GTAAGAAGGA TGA                          463
```

(2) INFORMATION FOR SEQ ID NO: 216:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 19 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iii) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 216:

TGGCCGGTGC AAAGGGCTG